

FINAL ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 4, 6-11, and 19-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 3, 4, 6-11, and 19-21, specifically claim 1, the claim requires that the layers on the passenger compartment side *of said support layer* have an air flow resistance of $500 \text{ Nsm}^{-3} < R1 < 2500 \text{ Nsm}^{-3}$. However, the specification does not provide support for the limitation that the layers specifically on the passenger compartment side of the support layer has the claimed air flow resistance. Pages 3 and 4 of Applicants' specification appears to support the general limitation that the layers on the passenger compartment side in general has the claimed air flow resistance due to the porosity of the barrier layer. Additionally, Applicants' specification teaches that "[i]t is important for optimising the acoustic effectiveness of the vehicle rooflining that the air flow resistance on the passenger compartment side is in the desired range" (*see* Applicants' specification, page 4, top paragraph). Applicants' specification later teaches that "[i]n a preferred embodiment, this barrier layer 8 has a thickness of $0.1 < d < 1.0$ mm and is designed in such a way to produce an air flow resistance of $500 \text{ Nsm}^{-3} < R1 < 2500$

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Nsm^{-3} , especially $900 \text{ Nsm}^{-3} < R1 < 1900 \text{ Nsm}^{-3}$ in the lining layers on the passenger compartment side.”. Therefore, although the specification generally describes the air flow resistance regarding the lining layers on the passenger compartment side, Applicants do not appear to have support for the specific limitation that only the layers on the passenger compartment side of the support layer has the claimed air flow resistance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 8, 9, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,582,906 to Romesberg in view of USPN 5,841,081 to Thompson.

Regarding claims 1, 3, 4, 8, 9, 19, and 21, Romesberg teaches a lining for a vehicle roof with an air-permeable support layer, an air-permeable first reinforcement layer on a vehicle roof side of said support layer, and an air-permeable second reinforcement layer on a passenger compartment side of said support layer, an air-impermeable back layer on a vehicle roof side of said first reinforcement layer, an air permeable decorative layer on a passenger compartment side of said second reinforcement layer, and the back, first reinforcement, support, second reinforcement, and decorative layers being bonded to each other with an air-permeable adhesive, and further comprising a semi-permeable, microporous and migration-resistant acoustic barrier layer provided between the second reinforcement layer and the decorative layer to make an

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acoustically optimisable and aesthetically-resistant vehicle rooflining, wherein the barrier layer comprises a mixed fibre fabric (see entire document including column 3 lines 27-40, column 4 line 15 to column 5 column 5 line 63, column 7 lines 16-62). For clarification, it should be noted that Examiner equates foam layer **11** to the claimed support layer, reinforcement mats **41** and **37** to the claimed first and second reinforcement layers, porous reinforcement mat **46** to the claimed barrier layer, air-impermeable layer **24** to the claimed air-impermeable back layer, and decorative fabric cover **52** to the claimed permeable decorative layer.

Regarding claims 1, 3, 4, 8, 9, 19 and 21, Romesberg does not appear to teach that the barrier layer weighs approximately 20 g/m² to 60g/m². However, Romesberg does teach that web **46** is designed to be porous to allow sound waves to pass through the composite while being dampened (Romesberg, column 5 lines 11-33). Since Romesberg is silent with regards to the specification of the barrier layer, it would have been necessary and thus obvious to look to the prior art for conventional specifications. Thompson provides this conventional teaching showing that it is known in the acoustical insulation art to form a nonwoven web comprising organic and polyester fibers with a basis weight of about 50 to 4,000 grams per square meter based on the desired sound absorption properties (Thompson, column 1 line 53 to column 2 line 24, column 5 lines 1-35, column 6 lines 10-63, column 11 lines 15-22). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the headliner barrier layer of Romesberg with the specifications as taught by Thompson, motivated by the expectation of forming a conventional headliner with sound and acoustical properties suitable for the desired application.

Regarding claims 1, 3, 4, 8, 9, 19 and 21, Romesberg in view of Thompson does not appear to teach that the layers on the passenger compartment side of the support layer have the claimed air flow resistance. Although the prior art does not disclose the claimed air flow resistance, the claimed property is deemed to be inherent to the structure in the prior art since the Romesberg and Thompson references teach an invention with a similar structural and chemical composition as the claimed invention. Properties are the same when the structure and composition are the same. The burden is on the Applicants to prove otherwise. Additionally, the claimed air flow resistance would obviously have been present once the Romesberg in view of Thompson product is provided. Additionally, since the prior art combination would inherently have an air flow resistance, it would have been obvious to one of ordinary skill in the vehicle headlining art at the time the invention was made to form the headliner of Romesberg in view of Thompson, with an air flow resistance, motivated by the desire of forming a conventional vehicle headliner having sound dampening properties (Romesberg, column 5 lines 11-33).

Regarding claim 3, the air-permeable support layer is made from a polyurethane foam (Romesberg, column 7 lines 1-15).

Regarding claim 4, the first reinforcement layer comprises a glass fibre layer and the second reinforcement layer comprises a glass fibre layer (Romesberg, column 4 line 63 to column 5 line 27).

Regarding claim 8, the barrier layer is migration-resistant to softeners, decomposition products used by ageing and/or additives from a polyurethane foam layer or adhesive films (Romesberg, column 4 lines 20-25).

Regarding claim 9, barrier layer has a thickness of 0.2 mm to 1.0 mm (Romesberg, column 7 line 50- 62). It should be noted that layer **24** of Romesberg may comprise DAF 899, which USPN 4,975,138 to Finlayson states has a thickness of 0.3 mm (Finlayson, column 4 lines 15- 35). Since Figure 2 of Romesberg depicts that **24** and **46** are approximately the same size, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the barrier layer **46**, having a similar thickness as **24**, motivated by the desire of forming a conventional vehicle headliner with the specifications shown in Figure 2 to create a suitably flexible and strong headliner.

Regarding claim 21, Romesberg in view of Thompson does not appear to teach that the barrier layer has a specific thickness of 0.285 mm. However, it should be noted that the thickness is a result effective variable. As the thickness increases, the layer becomes stronger and the air flow is altered. Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the barrier layer with a thickness of 0.285 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In the present invention, one would have been motivated to optimize the thickness to create a suitably flexible and strong layer for use as a headliner.

Response to Arguments

5. Applicants' arguments filed November 5, 2007, have been fully considered but they are not persuasive. Applicants argue that at least one layer in Romesberg's finished product is impermeable and there is no barrier layer. Examiner respectfully disagrees. While film adhesive **24** may be non-porous, layer **46**, positioned between the decorative layer and the second

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reinforcement glass fiber layer is porous, allowing sound waves to pass through the web (column 5 lines 11-43). Additionally, Romesberg teaches that "sound waves pass through web **46**, etc. and are dampened twice; the first time in traveling through the multi-layer composite to non-porous film **24**, and the second time as the sound waves are reflected from film **24** back through the composite" (Romesberg, column 5 lines 28-33). Since Romesberg in view of Thompson appears to teach a substantially similar structure and composition as the claimed invention, the claims remain rejected.

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6. Claims 1, 4, 6-10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,204,209 to Rozek in view of US Pub. No. 2001/0036788 to Sandoe and further in view of Thompson.

Regarding claims 1, 4, 6-10 and 20, Rozek teaches a lining for a vehicle roof with an air-permeable support layer, an air-permeable first reinforcement layer on a vehicle roof side of said support layer, and an air-permeable second reinforcement layer on a passenger compartment side of said support layer, an air permeable decorative layer on a passenger compartment side of said second reinforcement layer, and the back, first reinforcement, support, second reinforcement, and decorative layers being bonded to each other with an air-permeable adhesive, and further comprising a semi-permeable, microporous and migration-resistant acoustic barrier layer provided between the second reinforcement layer and the decorative layer to make an acoustically optimisable and aesthetically-resistant vehicle rooflining wherein the barrier layer comprises a mixed fibre fabric (see entire document including column 2 line 48 to column 3 line

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51, column 4 lines 7-67, column 5 lines 1-67, column 6 lines 1-11). For clarification, it should be noted that Examiner equates fibrous batt 12 to the claimed support layer, porous reinforcement mats 16 and 18 to the claimed first and second reinforcement layers, porous reinforcement mat 20 to the claimed barrier layer, and decorative fabric cover 22 to the claimed permeable decorative layer.

Regarding claims 1,4, 6-10 and 20, Rozek does not appear to teach an air-impermeable back layer on a vehicle roof side of the first reinforcement layer. However, Sandoe is directed to a vehicle headliner and laminate (Title). Sandoe teaches that vehicle headliners on the interior of the automobile are decorative panels which separates the passenger compartment from the sheet metal forming the roof of the vehicle (Sandoe, paragraph 0005). Examiner equates the inherently air-impermeable sheet metal roof to the claimed air-impermeable layer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to consider the sheet metal roof of Sandoe to be the final layer of Rozek, motivated by the desire to employ the laminate of Rozek in a final product such as a lined roof.

Regarding claims 1, 4, 6-10 and 20, Rozek in view of Sandoe does not appear to teach that the barrier layer weighs approximately 20 g/m^2 to 60 g/m^2 . Since Rozek and Sandoe are silent with regards to the specification of the barrier layer, it would have been necessary and thus obvious to look to the prior art for conventional specifications. Thompson provides this conventional teaching showing that it is known in the acoustical insulation art to form a nonwoven web comprising organic and polyester fibers with a basis weight of about 50 to 4,000 grams per square meter based on the desired sound absorption properties (Thompson, column 1 line 53 to column 2 line 24, column 5 lines 1-35, column 6 lines 10-63, column 11 lines 15-22).

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the headliner barrier layer of Rozek in view of Sandoe with the specifications as taught by Thompson, motivated by the expectation of forming a conventional headliner with known characteristics and acoustic insulation properties suitable for the desired application.

Regarding claims 1,4, and 6-10, Rozek in view of Sandoe and further in view of Thompson does not appear to teach that the layers on the passenger compartment side have the claimed air flow resistance. Although the prior art does not disclose the claimed air flow resistance, the claimed property is deemed to be inherent to the structure in the prior art since the combination of the references teach an invention with a similar structural and chemical composition as the claimed invention. Properties are the same when the structure and composition are the same. The burden is on the Applicants to prove otherwise. Additionally, the claimed air flow resistance would obviously have been present once the Rozek in view of Sandoe and further in view of Thompson product is provided. Additionally, since the prior art combination would inherently have an air flow resistance, it would have been obvious to one of ordinary skill in the vehicle headlining art at the time the invention was made to form the headliner of Rozek in view of Sandoe and Thompson, with an air flow resistance, motivated by the desire of forming a conventional vehicle headliner having sound dampening properties.

Regarding claim 4, the first reinforcement layer comprises a glass fibre layer (Rozek, column 4 lines 59-67).

Regarding claim 6, the barrier layer comprises cellulose and polyester fibres bonded together (Rozek, column 5 lines 26-67).

Regarding claim 7, Rozek in view of Sandoe and Thompson does not appear to teach that the surface of the barrier layer is treated or wetted so that said treated or wetted surface can enter into adhesion with said adhesive. Absent a showing to the contrary, it is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The burden has been shifted to Applicants to show unobvious difference between the claimed product and the prior art product. The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if Applicant intends to rely on Examples in the specification or in a submitted declaration to show unobviousness, Applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding claim 8, Rozek in view of Sandoe and further in view of Thompson does not appear to teach that the barrier layer is migration-resistant to softeners, decomposition products used by ageing and/or additives from a polyurethane foam layer or adhesive films. Although the prior art does not disclose the claimed properties, the claimed properties are deemed to be inherent to the structure in the prior art since the combination of the references teaches an invention with a similar structural and chemical composition as the claimed invention,

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specifically in respect to the specifications of the barrier layer. Properties are the same when the structure and composition are the same. The burden is on the Applicants to prove otherwise.

Regarding claim 9, Rozek in view of Sandoe does not appear to teach that the barrier layer has a thickness of 0.2 mm to 1.0 mm. Since Rozek and Sandoe are silent with regards to the specification of the barrier layer, it would have been necessary and thus obvious to look to the prior art for conventional specifications. Thompson provides this conventional teaching showing that it is known in the acoustical insulation art to form a nonwoven web comprising organic and polyester fibers with a thickness of greater than about 0.5 cm based on the desired sound absorption properties (Thompson, column 5 lines 1-8). Although the ranges do not necessarily overlap, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the headliner barrier layer of Rozek in view of Sandoe with the specifications as taught by Thompson, motivated by the desire of forming a conventional vehicle headliner having sound dampening properties.

Regarding claim 10, the adhesive is a conventional two-pack polyurethane adhesive. It should be noted that the adhesive in Rozek is an elastomeric composition comprising 100 parts by weight polyol having three or four hydroxyl groups, 85 parts by weight of an isocyanate compound having at least 2 reactive isocyanate groups, and 5 to 20 parts of solvent such as trichlorofluoromethane or methylene chloride (column 5 lines 13-20). USPN 5,874,173 to Wenning teaches that two-pack polyurethane adhesives are essentially characterized by

polyisocyanates as hardeners and by predominately oligomeric diols and/or polyols as resin. Therefore, the adhesive of Rozek can be considered to be a two-pack polyurethane adhesive.

Response to Arguments

7. Applicants' arguments filed November 5, 2007, have been fully considered but they are not persuasive. Applicants argue that any release layer **24** or "barrier layer" of Rozek is not on the decorative side of the lining. Additionally, Applicants argue that Sandoe does not discuss a barrier layer or the features lacking in Rozek.

Regarding Applicants' arguments, Examiner respectfully disagrees. Applicants' argument that release layer **24** or "barrier layer" is not on the decorative side of the lining is not consistent with Examiner's rejection. It should be noted that the rejection recites for clarification that Examiner equates fibrous batt 12 to the claimed support layer, porous reinforcement mats 16 and 18 to the claimed first and second reinforcement layers, porous reinforcement mat 20 to the claimed barrier layer, and decorative fabric cover 22 to the claimed permeable decorative layer. Release layer **24** is not equated to the barrier layer as Applicants suggest; porous reinforcement mat 20 is equated to the claimed barrier layer. Additionally, Sandoe is not relied on to teach the claimed barrier layer, as set forth above. Since Rozek in view of Sandoe and further in view of Thompson appears to teach a substantially similar structure and composition as the claimed invention, or since the invention of Rozek in view of Sandoe and further in view of Thompson would have been obvious over the claimed invention, the claims remain rejected.

Claim Rejections - 35 USC § 103

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romesberg in view of Thompson, as applied to claims 1, 3, 4, 8, 9, 19 and 21 above, and further in view of USPN 4,581,432 to Blum.

Regarding claim 11, Romesberg in view of Thompson does not appear to teach that the decorative layer is an air-permeable polyethylene non-woven fabric layer. However, Romesberg does teach that the decorative cover sheet can be a porous fabric material (column 6 lines 11-15). Since Romesberg is silent with regards to the type of porous fabric material, it would have been necessary and thus obvious to look to the prior art for conventional materials. Blum teaches molded parts useful for headliners comprising a decorative material which can be a non-woven material comprising polyethylene (Blum, column 16 lines 14-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the decorative layer of Romesberg from a polyethylene nonwoven fabric, as taught by Blum, motivated by the desire of forming a conventional vehicle headliner having sound dampening properties and having a conventional decorative fabric suitable for the desired application.

Response to Arguments

9. Applicants' arguments filed November 5, 2007, have been fully considered but they are not persuasive. Applicants argue that Blum does not disclose a barrier layer or any feature that is lacking in Romesberg and Thompson. Examiner respectfully disagrees. It should be noted that Blum is not relied on to teach a barrier layer. As set forth above, for clarification, Examiner equates foam layer **11** to the claimed support layer, reinforcement mats **41** and **37** to the claimed

first and second reinforcement layers, porous reinforcement mat **46** to the claimed barrier layer, air-impermeable layer **24** to the claimed air-impermeable back layer, and decorative fabric cover **52** to the claimed permeable decorative layer. Therefore, Romesberg in view of Thompson appears to teach a substantially similar structure and composition as the claimed invention and the claims remain rejected.

Conclusion

10. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER Y. CHOI whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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